Forest Stand Improvement

Conservation Practice Specification Sheet

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

MT-ECS-666A (1)
08/2002

666A - FOREST STAND IMPROVEMENT - HARVESTING

Clear cut area one year after harvesting.

A different clear cut area approximately 20 years after harvesting.

LANDOWNER _____ **FIELDS** _____ **ACRES** _____

LEGAL LOCATION: _____

DEFINITION AND PURPOSE:

Systematically removing some or all of the merchantable trees from a forest stand to improve the conditions for forest growth and/or to encourage regeneration and normal development of a new stand.

STAND DESCRIPTION

		BEFORE HARVESTING	AFTER HARVESTING
Age Class	(YRS)		
Composition	(%)		
Size	(DBH)		
Condition	(GFP)		
Other: _____			

SOILS

Soil(s): _____

Limitations Ratings: Equipment _____ Seedling Mortality _____
Windthrow _____ Plant Competition _____
Other: _____

Soil(s): _____

Limitations Ratings: Equipment _____ Seedling Mortality _____
Windthrow _____ Plant Competition _____
Other: _____

NRCS, MT
August 2002

HARVEST METHOD

EVEN-AGED MANAGEMENT HARVEST SYSTEMS:

- ❒ Clearcut
- ❒ Shelterwood
- ❒ Seed-Tree
- ❒ Thinning
- ❒ Coppice
- ❒ Overstory Removal

UNEVEN-AGED MANAGEMENT HARVEST SYSTEMS:

- ❒ Group Selection
- ❒ Coppice Selection
- ❒ Single-Tree Selection
- ❒ Thinning

Wood Products: _____

Trees to Leave/Cut, Spacing, Equipment, Season, etc: _____

_____

_____

_____

SITE PREPARATION

Desired Species to Regenerate: _____

Site Preparation: _____ AS PART OF HARVEST _____ SEPARATE OPERATION

_____

_____

_____ See FOTG, Section IV, Practice Standard 490-Forest Site Preparation

_____ See FOTG, Section IV, Practice Standard 612-Tree and Shrub Establishment

SLASH DISPOSAL

Describe Method, Timing: _____

_____

_____

_____

ADDITIONAL NOTES

_____

_____

_____

_____

_____

ATTACHED SPECIFICATIONS

338-Prescribed Burning	❒ Yes	❒ No
342-Critical Area Planting	❒ Yes	❒ No
490-Forest Site Preparation	❒ Yes	❒ No
560-Access Road	❒ Yes	❒ No
612-Tree/Shrub Establishment	❒ Yes	❒ No
655-Harvest Trails & Landings	❒ Yes	❒ No
666B-Pre-Commercial Thinning	❒ Yes	❒ No
_____	❒ Yes	❒ No

CERTIFICATION:

This Practice Meets NRCS Standards and Specifications.

_____	_____	_____
NRCS Conservationist	*Job Approval Authority*	*Date*
_____		_____

666B - FOREST STAND IMPROVEMENT - THINNING

Trees were too closely spaced before thinning.

The stand is better growing and produces more forage.

LANDOWNER _____ **FIELDS** _____ **ACRES** _____

LEGAL LOCATION: _____

DEFINITION AND PURPOSE:

Removing unmerchantable or unwanted trees from forested areas to fully use a site's potential; to maintain plant cover; to improve stand composition by leaving the best trees – spaced for best growth; to improve forage production; or improve natural beauty, wildlife, or recreation values.

OBJECTIVES

- ❒ Reduce Stocking
- ❒ Change Composition
- ❒ Improve Condition
- ❒ Reduce Health Problems
- ❒ Other: _____

STAND DESCRIPTION

		BEFORE THINNING	AFTER THINNING
Stocking	(#/AC)		
Composition	(%)		
Average Age(s)	(YRS)		
Average Diameter	(IN.)		
Insects & Disease			

THINNING SPECIFICATIONS

Desired Spacing: _____ trees/acre+25%

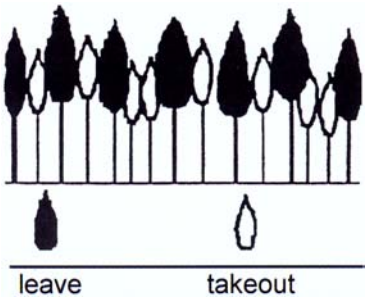
APPROXIMATELY _____ ft X _____ ft

Trees to Leave/Remove: LEAVE ONLY GOOD QUALITY TREES OF _____ THAT HAVE FULL CROWNS, GOOD FORM, AND ARE GROWING VIGOROUSLY. REMOVE ALL CROOKED, DYING, DISEASED, INJURED, AND SUPPRESSED TREES.

Dates to be Performed: _____

Type of Equipment: _____

_____



SLASH DISPOSAL

❒ Interior Treatment Area
- __ Pile & Burn
- __ Lop & Scatter __ INCHES SLASH HEIGHT

❒ Property Boundary – 100-foot swath
- __ Pile & Burn
- __ Lop & Scatter __ INCHES SLASH HEIGHT

JOB SKETCH

Attached Plan Map ❒ Yes ❒ No

ATTACHED SPECIFICATIONS

338-Prescribed Burning	❒ Yes	❒ No
528A-Prescribed Grazing	❒ Yes	❒ No
_____	❒ Yes	❒ No

ADDITIONAL NOTES

CERTIFICATION:

This Practice Meets NRCS Standards and Specifications.

NRCS Conservationist	*Job Approval Authority*	*Date*

FOREST PRACTICE DECISION KEY

STEP 1: Determine land management objectives – i.e., wood production, forage production, wildlife habitat enhancement, aesthetics, etc. The more detailed the objectives are, the better.

STEP 2: Inventory the stand.

STEP 3: Define the desired future condition of the stand in light of the objectives and inventory.

STEP 4: Select the appropriate practices using the DECISION KEY below.

> **NOTE:** The key is not an exhaustive list of things to consider. For example, tree form (a consideration for cutting sawlogs) is not included. Also, depending on objectives, it may be desirable to have trees in unhealthy conditions to attract wildlife.

1a. Desirable species* are growing at their potential or are able to release* given adequate growing space 2

1b. Desirable species are not able to release given adequate growing space . . . . . replace existing stand

2a. Desirable species are healthy* 3

2b. Desirable species are not healthy . . . . . replace existing stand

3a. Stand is overstocked (according to objectives) with desirable species . . . . . manage existing stand

3b. Stand is fully stocked* (according to objectives) and 4

3c. Stand is understocked (according to objectives) with desirable species 5

4a. Undesirable species are overabundant (desirable species understocked) 5

4b. Undesirable species absent or not significant . . . . . no treatment needed

5a. Stocking level of desirable species is adequate to help meet objectives . . . . . manage existing stand

5b. Stocking level of desirable species is too low to help meet objectives . . . . . replace existing stand

REPLACE EXISTING STAND

- Clear-cut
- Seed tree cut
- Shelterwood cut
- Selection (single tree or group)
- Sanitation/salvage cutting*
- Planting or natural regeneration

MANAGE EXISTING STAND

- Thinning (commercial, pre-commercial)
- Improvement cut*
- Sanitation/salvage
- Over/Understory*

*See definitions on the following page.

FOREST PRACTICE DECISION KEY *continued*

DEFINITIONS

Fully Stocked:	According to the Field Office Technical Guide, Section III – Quality Criteria: Recommended D + X plus or minus 25%. Example: The recommended spacing for a low-site Douglas-fir stand is D + 8. If average stand diameter is 10 inches, this translates into an 18-foot spacing or 135 trees per acre plus or minus 34 (25%). Outside of this range is considered over or understocked.
Desirable Species:	The tree species suited to the management objective of the landowner. Example: A mixed forest of conifers and hardwoods. For wood production, the hardwoods may be undesirable; but for wildlife habitat, both may be desirable.
Stand Health:	Stands with infestations of insects or disease, that have reached old age, or that have been suppressed for long periods are poor health risks. Also included are stands with excessive amounts of dead material (branches, standing snags or downed logs) that pose a high fire hazard.
Release:	The ability of trees to increase their rate or growth by taking advantage of additional sunlight, moisture, and nutrients when surrounding trees are removed.
Salvage cutting:	The harvest of dead, dying, damaged, or deteriorating trees primarily to put the wood to use before it becomes worthless.
Sanitation cutting:	The harvest of dead, dying, damaged, or deteriorating trees as well as those susceptible to attack, but for the purpose of reducing the spread of biotic pests.
Improvement cutting:	Partial of complete removal of any undesirable tree species in a mixed stand due to potential forest health problems, low productivity or marketability, or other management objectives.
Overstory removal:	Cutting the remaining overstory left from a prior harvest after regeneration has been established; or removal of decadent or undesirable trees to release the understory stand.
Understory removal:	Similar to improvement cutting, but restricted to understory species. This is common where regeneration following harvest is of an undesirable species.